

The Mediating Effect of Total Quality Management Practices on The Relationship Between Transformational Leadership and Service Quality of Abu Dhabi Universities

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ABSTRACT

Higher Education Institutions (HEIs) are considered the pillar of development all over the world due to their significant role in the development of the economy, as well as providing skilled people who contribute to national economic growth. This study aims to examine the effect of transformational leadership on the service quality of HEIs and evaluate the mediating influence of total quality management (TQM) on this relationship. To achieve these objectives, quantitative methodology was applied to test research hypotheses. Questionnaires were administered using simple random sampling technique to collect the data from a population consisting of 431 students from six public and private universities in Abu Dhabi. Data analysis is based on Structural Equation Modeling (SEM). The result reveals that service quality is influenced by transformational leadership, whereas TQM practices partially mediate this relationship. All hypotheses are supported and all relationships are significant. This result will help HEIs in the UAE to enhance education quality and sustain continuous development in the higher education market, as well as to be in a better competitive position with international and private institutions. By fostering a culture of quality and continuous improvement through TQM, UAE universities can solidify their reputation as centers of educational excellence and innovation in the region. Moreover, the outcome of this study helps UAE universities recognize the impact of transformational leadership in driving positive change and facilitating growth in academic standards and student success.

Keywords: TQM Practices, Transformational Leadership, Service Quality

1. Introduction

Higher education institutions (HEIs) are the foundation of global development because they provide trained personnel who strengthen national economies. Today, higher education

marketing is a substantial source of revenue in industrialized nations. Thus, well-organized, supported, and high-quality higher education is critical to every country's progress and societal improvement (Sabah, 2013). Moreover, higher education is a key driver of community development and competitiveness (Maneejuk & Yamaka, 2021). HEIs contribute to national economic competitiveness and sustainability (Krstić et al., 2020). Previous research has utilized education as a simple indicator of human capital development to investigate its impact on economic growth and national development (Volchik et al., 2018; Carrillo, 2019; Bilan et al., 2020). The reputation and legitimacy of higher education institutions are critical for maintaining a competitive edge since local and international students trust them (Giorgia et al., 2020). Service quality in education is a popular research topic, thus numerous studies are being conducted to analyze and measure the service quality of HEIs (Frances & Cameron, 2021). Higher education must be at the highest level of education quality to promote scientific research and develop qualified workers and marketable professionals (Evan et al., 2021). Total quality management (TQM) is an effective method for maintaining educational and service quality. However, in the United Arab Emirates (UAE) educational institutions face several challenges in providing high-quality education, including the implementation of TQM (Fatima et al., 2019). Maintaining quality in higher education is not an easy goal. As a result, most prominent colleges, including the UAE, are hiring TQM professionals for this purpose. Even with TQM capabilities, service quality cannot be enhanced until strong leadership launches development initiatives that encourage continuous improvement and innovation in education (Umme et al., 2015). To that end, transformational leadership promotes educational innovation and helps HEIs to achieve high quality in the educational process (Noraini et al., 2014; Abd El-Hamed, 2018). Without a leader capable of dealing with the challenges of today's tough competition in the higher education market, HEIs may struggle to maintain higher education quality. As TQM promotes continual improvement in the work and organization function, transformational leadership is the optimal leadership style to foster TQM in the higher education domain. Aldaweesh (2018) states that there is insufficient empirical research on TQM and transformative leadership, particularly in higher education. Thus, future studies should explain how transformational leadership enhances HEI quality. TQM and transformational leadership at higher education institutions, particularly in developing countries such as the UAE, are rarely examined empirically, making it critical to investigate their effects on higher education performance and effectiveness. A thorough analysis can assist lawmakers and administrators in making informed decisions and implementing policies to improve the country's education system. Therefore, this study offers new evidence of the significant role of transformational leadership and TQM in the higher education domain by examining the relationships between these variables.

2. Education system in UAE

The UAE is home to numerous public and private universities and has rapidly created a robust and diverse higher education system. Furthermore, the UAE government has promoted education because it believes in producing a well-educated workforce capable of keeping up with the global scientific and technological revolution. The UAE's minister of higher education claims that colleges have numerous challenges, including integrating TQM across the educational process. The UAE's public, private, and e-learning universities are among the world's greatest and most successful, e.g., Abu Dhabi is home to several renowned private and public higher education institutions. Between 2011 and 2016, Abu Dhabi's private institutions increased from five to ten, including UAE University, Zayed University, Higher Colleges of Technology, New York University Abu Dhabi, the University of Khalifa, and Abu Dhabi University. Al Ain, Abu Dhabi, is home to the Emirates' oldest and most affluent public university, which was founded in 1976. For example, UAE University, one of Abu Dhabi's top universities, quickly established a distinguished and diverse educational system, making it a UAE academic landmark. Zayed institution, which is accredited by the Middle States Commission for Higher Education in the United States, is the second most well-known institution in Abu Dhabi and the UAE.

HEIs shape developing nations' economies, such as the UAE's. With the world evolving so rapidly, higher education has numerous challenges in providing world-class education of excellent quality. Thus, higher education executives must support the mission and improve service (Girish & Manish, 2020). UAE universities, like peers in the world, face numerous challenges, including competition from international HEIs, therefore must appoint executives who can maintain service quality comparable to those in Europe and the United States. In this regard, Surya et al. (2019) argue that private universities should retain long-term competitiveness to help national growth. To adopt TQM in the long run, HIEs in the UAE should establish a quality framework based on TQM principles, with regular follow-up and monitoring. Other researchers mentioned the chance to build transformational leadership in higher education, as well as their role in increasing the service quality of HEIs in UAE (Shafi & Ab Wahid, 2023). The research in this field is limited and not discussed using TQM. Thus, more research into transformational leadership and TQM in UAE higher education institutions is required. Such research can shed light on how these leadership techniques can improve education and services in UAE higher education institutions. In response to growing rivalry, new Middle Eastern universities and research institutes are using TQM principles to improve higher education efficiency and effectiveness (Aldaweesh, 2018). However, UAE public and private universities should understand how transformational leadership and TQM may increase service quality. HEIs want a more effective leader with a clear vision and intellectual motivation, rather than a

dominant personality. In this regard, transformational leadership is more adaptable to national and international cultures, and it has sparked academic interest for decades (Fatih, 2018).

As leadership influences an organization's culture and practices, there is no exception in higher education. In this regard, to evaluate TQM's impact on higher education in the UAE, the effective leadership style that helps HEIs to achieve this goal must be considered. Therefore, understanding how transformational leadership influences TQM implementation in HEIs will help us better understand its success and why developing nations are increasingly allocating transformational leaders to higher education (Owusu-Agyeman et al., 2021). Prestiadi et al. (2020) discovered that transformational leadership assisted HEIs in developing countries to attain revolutionary education 4.0. This information can then be used to guide decision-making and develop strategies to improve educational quality in the UAE. In the same context, Fernandez and Shaw (2020) discovered that leadership style is crucial to TQM implementation in higher education institutions, impacting leaders' commitment, responsibility, and continuous improvement efforts to attain high-quality outcomes. Transformational leaders, who inspire and excite employees, use TQM more frequently. Further research is needed to determine the impact of a transformative relationship style on UAE educational culture (Fleenor & Bryant, 2002). Whereas Aldaweesh (2018) observes that research in this area is limited.

The UAE features a variety of universities and colleges where both natives and foreigners can study. Despite the UAE's high Global Competitiveness Index rankings (2015, 2016, 2017), teachers have been criticized for poor educational performance. In this regard, UAE higher education institutions are struggling to maintain service quality (Udriyah et al. 2019). TQM could fix these issues; however, many people lack the resources to implement it. For example, HEI leaders should strive to implement ISO standards of TQM in educational settings (Hanaa et al., 2020) and succeed with TQM (Alzoubi & Ahmed, 2019). In this regard, Soomro and Ahmad (2012) reported several problems with quality management in higher education. These issues remain unresolved. Thus, TQM is especially vital for UAE higher education institutions, which must change their architecture, leadership, and funding to compete with overseas schools (Nadim & Al-Hinai, 2016). Public universities in the UAE did not report the impact of ISO TQM principles on service quality, so it is unknown how the quality department implementing TQM is critical to service quality at UAE HEIs. Overall, UAE universities should use TQM-based quality frameworks (Zanqar et al., 2019). As any higher education system is judged by the quality of its graduates and their placement in the labor market, the UAE must employ TQM to tailor its higher education system to its cultural, economic, and institutional contexts (Ashour, 2020). Another challenge to TQM implementation at UAE HEIs is a dearth of transformational leaders capable of addressing the aforementioned concerns while also providing high-quality

education (Hebah & Safiah, 2020). TQM may mediate the success of transformative leadership and higher education in the UAE, but this needs to be proven empirically.

Despite the numerous reports that reveal the issues in TQM implementation in HEIs of UAE, this country remains the most competitive country in the Arab World, according to the Global Competitiveness Index, however, its rating fell back to 2015-16 levels in 2017-2018. This was primarily owing to the greater progress of other countries, particularly in their educational systems. Table 1 illustrates that the reduction in global competitiveness ranking highlights the need to expedite change in TQM strategies. As HEIs are significant drivers of competitiveness, enhancing the service quality of HEIs in the UAE should elevate their ranks to a higher level.

Table Error! No text of specified style in document.: UAE Higher Education in Global Competitiveness Index Rankings

	Change from 2016-17 to 2017-18	2017-18	2016-17	2015-16
Overall	↓	17 th	16 th	17 th
Quality of primary education	↓	16 th	12 th	13 th
Quality of higher education	↓	12 th	10 th	12 th
Primary education enrolment, net %	↑	87 th	100 th	94 th
Secondary education enrolment, gross %		NA	71 th	67 th
Tertiary education enrolment, gross %	↑	94 th	96 th	99 th

(Sources: World Economic Forum, YouGov Omnibus Research 2018)

3. Literature Review

3.1 Transformational Leadership

Transformational leaders assess each subordinate's ability and aptitude to do their duties while taking into account future growth and empowerment (Bastari et al., 2020). They assess the need for change, develop a vision, and mobilize resources to accomplish it (Manurung, 2020). Transformational leadership was developed in early 1990 when charisma was found as an idealized influential personal trait on followers. Later, Bass (2008) identified transformational leaders' characteristics as charm, inspiration, and individualization. According to Bass (2008), transformative leaders encourage their subordinates to think positively, act differently, and solve

problems creatively. Transformational leaders also inspire their followers to grow, become more conscious, and develop new skills (Retno & Achmad, 2020).

Today's workplace is characterized by both short and long-term changes. Adaptable organizations can be prepared at any time (Awaru 2015). Every level of the organization must innovate and evolve (Yilmaz & Comez, 2020). True leaders prioritize their followers' performance, instill confidence, and simplify work before leading them to reach the vision and corporate goals (Chawla & Lenka, 2015). A transformational leader does more than just encourage others. For an organization to succeed, leaders must be present and willing to persuade and instruct (Bass & Riggio, 2006). Moreover, transformational leaders inspire individuals to achieve greatness (Azizah, 2016). Aside from that, transformational leadership has been intensively researched in recent decades (Berkovich and Eyal, 2017). According to a recent study, transformational leadership consists of a series of rather consistent actions that differ primarily among individuals (Sanjeet et al., 2021). Bass (1985), a well-known leadership theorist, used the term "transformational leadership" to define a leadership style that motivates and inspires followers. Bass and Riggio (2006) state that transformational leaders inspire their followers to improve their professional talents. In the same context, Bass and Riggio (2006) describe transformational leadership as the ability to change and reform others. According to Mahdinezhad et al. (2017), and Maskurochman et al. (2020), transformational leadership involves the visionary leader overcoming followers to achieve superior results. Setting a vision, supporting social reform, and acting as social change agents (Bennis, 1997).

Bennis and Nanus (1985) identified four characteristics of transformative leadership in the mid-1980s. Bass, a pioneer of transformative leadership, has changed its characteristics several times (Kinik and Cetin, 2015). Transformational leadership is based on idealized influence: a leader's dedication, commitment, and principles for influencing people (Arokiasamy et al., 2016). Inspirational motivation happens when a transformational leader inspires others with a vision and goals (Prabowo et al., 2018). Leaders' desire and excitement drive followers to go above and beyond expectations (Ali et al., 2020). The transformational leader connects self-concept to corporate goals and debates, as well as changing followers' attitudes and self-esteem. To motivate workers to exceed expectations. Supporters will be more driven to help the group flourish (Wahyuningdyah, 2015). Transformational leaders must redirect their followers' attention from their self-interest to a common goal and vision that motivates them to go above and beyond (Cemil et al., 2020). According to Mohammed et al. (2020), transformational leaders envision an appealing, encouraging, exciting, and inspiring future for their followers. These leaders use logic to drive others and are academically inclined, particularly when it comes to problem-solving. Their performance culture encourages creativity and innovation (Jeff et al.,

2015). Followers are encouraged to think differently and take significant risks (Wang & Cheng, 2020). The principal traits of transformational leadership are

idealized influence, inspirational motivation, individualized consideration, and intellectual stimulation as described below.

3.1.1 Idealized Influence

Idealized influence and inspiring motivation are also used to assess transformational leadership since they assist leaders in achieving the organization's constantly defined, desirable, and tangible future goals (Buil et al., 2019). Leaders can inspire pride, faith, and respect in their followers (Sladjana, 2017). Idealized features and behaviors change followers' behavior (Budur & Demir, 2019). Leaders are most often admired for inspiring followers' dignity, pride, and dedication to the organization (Ali et al., 2020). Transformational leaders benefit their followers through appreciation, honesty, respect, and trust (Maskurochman et al., 2020). Thus, such leaders attract followers. One of the best action metrics is learning about core principles, a good strategy, and the spiritual and moral consequences of decisions.

3.1.2 Inspirational Motivation

According to Bass (1985), transformational leadership requires motivation, while Bass and Avolio (1991, 1997) defined inspirational motivation as a leader's ability to inspire followers to work hard and join the organization. Employee trust is crucial to achieving the company's aim. Al-Sada et al. (2017) stated that transformational leaders motivate workers to be more productive. Inspiration in transformative leadership makes a leader's level aim more desirable and encouraging, to inspire followers, transformational leadership creates transformative communication abilities that make the leader seem like an idol (Prabowo et al., 2018). Leaders' capacity to inspire personnel with a compelling vision is inspirational motivation. Leaders must inspire staff to accept new ideas and constantly alter their work while the industry undergoes transformative changes. Leaders conducting transitions may act differently to inspire their people (Boamah et al., 2017).

3.1.3 Intellectual stimulation

Transformational leaders motivate their teams to excel by encouraging innovation and intellectual stimulation (Al-Sada et al., 2017). Leaders stimulate intellectually to motivate workers to think differently about difficulties (Sladjana, 2017). Innovating from a different angle, Caspi et al. (2013) found that intellectual stimulation gives leaders breakthrough creative judgment that their followers already have (Bass & Riggio, 2006). Fundamental to

transformative leaders' intellectual stimulation is their followers' ability to handle work-related problems. Leaders seem better prepared to handle workplace issues.

Intellectual stimulation is leaders' ability to foster innovation and invention by encouraging followers or employees to solve challenging problems (Buil et al., 2019). This allows transformative leaders to develop creative solutions to problems. A leader intellectually stimulates followers to perform a task in a certain way (Maskurochman et al., 2020).

3.1.4 Individualized Consideration

To foster strong leader-subordinate teamwork, leaders use personal concerns like their wishes and feelings against their followers. Giving each employee individual attention and resolving their difficulties is important. That trait indicates how much a leader listens to and addresses individual issues and supports followers as needed (Bass & Avolio, 1994). Leaders perceive employees as team members, admire them, and assist them to improve their teamwork skills. Transformative leaders, according to Bass and Riggio (2006), inspire, encourage, and give employees the advice and support they need to adapt to change. This motivates workers to work better (Suifan & Al-Janini, 2017; Sladjana, 2017).

3.2 Service Quality

Quality in education entails standards, methods, and judgments that enhance learning. This section discusses service quality in the context of educational institutions, teaching and administrative staff, and the working circumstances of employees who have a direct or indirect link with the educational system. The objectives, ideals, and ambitions of each educational institution determine the quality of education. Educational institutions must improve their quality as science and technology advance at a rapid pace. The goal of education is to produce exceptional graduates, which necessitates a high-quality educational process. Quality education necessitates effective school organization (Meilina 2010). Students can achieve high levels if given the appropriate learning opportunities (Sam et al., 2020).

According to Ciurea and Nedelcu (2014), educational quality is an 'added value' that should exist at all levels. Education promotes growth and is one of the most effective strategies for reducing poverty and improving health, gender equality, peace, and stability (World Bank, 2015). Educational quality fosters long-term prosperity and security (Kosgei, 2019), hence it has changed to match consumer demands (Nikolaos & Eleni, 2020).

Quality education management entails delivering high-quality education to raise a generation of individuals with potential, abilities, and talents capable of growing and developing in all aspects of life and competing on a global scale. Quality education necessitates quality management,

including TQM (Rosinawati et al., 2021). Although service quality standards differ between institutions, they all share many essential ideals and pillars that strive to produce the best product. Quality education is also dependent on students' thinking, research, criticism, analysis, personality, and opinion-forming abilities. To suit labor market and community needs, education must meet quality standards, which include academic courses. The quality of education includes pedagogical and administrative frameworks, infrastructure, facilities, student success and outcomes, and continuous development (Poksinska 2002). Quality management in education is an important research topic, hence several studies are being conducted to examine and measure quality. It is critical to acknowledge that educational quality is multifaceted and influenced by numerous factors (Crissien-Borrero et al., 2019). To measure educational quality, you must first identify the factors that influence it. Garira (2020) states that a coherent and operational conceptual framework for education quality is required to completely realize and improve education quality in schools. This literature review aims to determine how authors assess educational quality. There is no unanimity on educational quality-related dimensions.

Many authors attempted to define educational quality by utilizing stakeholders, techniques, models, and systems (Kumar, 2017). Ahmad (2015) recommends quantifying education quality based on students' perspectives and institutional study experiences. Kumar (2017) discovers that, while most studies vary in geography and sample size, education quality is quite diverse, with no unifying framework. Crissien-Borrero et al. (2019) discovered that quality models may be developed for any type of educational institution using the same methodologies for assessing and comparing program quality (Gambhir et al., 2016). Viswanadhan (2007) prioritizes factors to improve engineering education quality in India. Studies based on thematic specialists' perspectives required multilevel decision-making. Viswanadhan (2007) developed a quality framework for education that covers structure and governance, financial and physical resources, human resources (academic staff and students), teaching or learning, and the interaction between the institution and the industry. In response to the demand for measuring service quality, Parasuraman et al. (1985) proposed a model called SERVQUAL to measure the quality of services offered by service organizations. They defined service quality as an organization's capacity to meet or exceed customer expectations. They found ten service quality determinants, which are (reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding, and tangibles). Later, Parasuraman et al. (1988) used factor analysis to reduce the initial ten characteristics to five, i.e., reliability, responsiveness, tangibles, assurance, and empathy (see Table 2). Three of the original ten dimensions (reliability, responsiveness, and tangibles) were kept, while the remaining seven were consolidated into two (assurance and empathy). The review of the literature reveals that the majority of studies in service organizations use the SERVQUAL model to analyze the gap between consumers' perceptions of

the service they received which are the students in the case of HEIs and their expectations of the service (Parasuraman et al., 1988).

Table 2: The dimensions of The SERVQUAL model (Parasuraman et al., 1988)

Dimension	Definition
Reliability	Ability to provide the given service consistently and accurately.
Tangibility	Actual evidence of facilities, equipment, and staff appearance.
Assurance	Employee knowledge and respect, as well as their potential inspire trust and confidence.
Responsiveness	Willingness to assist clients and deliver timely service.
Empathy	The ability of service providers to understand and share the feelings of their customers

The SERVQUAL dimensions have been widely used in a variety of service areas, including higher education (Faisal, 2024). In this regard, Sherry et al. (2004), suggested that the SERVQUAL model offered useful understanding and was an excellent starting point to measure service quality in many cases, but a more in-depth analysis and empirical reports in this area are required. The adoption of SERVQUAL in measuring the quality of education is based on increasing student involvement just like customers in the market because the SERVQUAL quality assessment scale was created to examine the similarity and disparity between customer perceptions and customer expectations (Parasuraman et al., 1994). When this model is applied to HEIs, consumer perceptions and expectations serve as the foundation for quality evaluation from the perspective of students (Faisal, 2024). SERVQUAL's popularity as a quality evaluation tool suggests that efforts to recruit and retain students by enforcing and publicizing quality practices place students' definitions of quality at the heart of educational development efforts. In another sense, the adoption of the SERVQUAL paradigm in measuring the quality of education service in HEIs is based on the notion that measuring the services provided for students is not much different from the one offered for customers in the market. The aforesaid claims were also confirmed by Owlia and Aspinwall (1996) who developed and validated service quality assessments in higher education based on six elements of the SERVQUAL paradigm.

3.3 Total Quality Management

TQM is a management practices with disciplined coordinates to achieve a high quality of service in educational contexts. It ensures that the HEIs constantly exceed students' expectations. TQM is used throughout all divisions, departments, and organizations. Superior management focuses its goals and activities on client demands while encouraging employee participation. In other

words, TQM also emphasizes continuous improvement, tools, strategies, and procedures (Venkatraman, 2007). TQM originated in Japan and spread globally (Beard-Gunter et al., 2019). Many theories and models have been proposed to explain TQM acceptability and execution. These theories and models include Deming's, Crosby's, Joseph's, Ishikawa's, and Six Sigma's (Pakdil & Pakdil, 2020). Deming's quality theory drives TQM implementation through 14 approaches. Some businesses have recognized that quality management can increase their competitiveness (Agrawal, 2019). Edward Deming was a renowned quality management advocate in 1950, and his efforts aided Japan's rapid recovery from WWII. Deming management is employed by a large number of companies throughout the world. In contrast, the importance of this strategy in formalizing and expanding management theory is understudied (Aguayo, 1991). Some higher education institutions that value patient care at a reasonable cost are reintroducing Deming's new expertise. Toyota is teaching higher education institutions a management model (Hunter, 2014). Juran emphasized excellent planning, management, and improvement (Juran 2004).

The International Organization for Standardization defined the principles of TQM and how organizations including HEIs implement these practices to achieve high-quality Education, e.g., ISO 9001:2015 adheres to seven quality management principles below:

3.3.1 Customer Focus

TQM's core principle is customer focus. Every company should focus on its clients since they determine quality, which always draws loyal customers (Permana et al., 2021). Companies that employ TQM will also be customer-focused and understand their needs (Ghanem, 2021).

Siddiqui and Rahman (2007) state that customer orientation leads to cost savings on application maintenance, increased management control, improved product and service quality, increased customer satisfaction, increased productivity, reduced production time, optimized human resource use, and flexibility in customer outreach.

3.3.2 Leadership

A leader's capacity to boost performance and manage resources is crucial for organizational success. Effective leadership involves inspiring others to strive tirelessly toward a common goal (Luburić, 2015). To improve TQM in the workplace, leadership styles emphasize TQM, so managers can choose the right style (Chih & Lin, 2009). Effective leaders consider new approaches to lead and track teams and individuals in their businesses (Kumar & Sharma, 2017).

3.3.3 Engagement of People

An organization's success and core activities depend primarily on its personnel. People must be fully engaged for long-term success. Management should prioritize professional, conscious, and responsible behavior, and include staff in important choices to foster a sense of responsibility and obligation towards the organization (Luburić, 2015).

3.3.4 Process Approach

Organization-wide quality management system practices must be designed and implemented. Successful processes need defining inputs, outputs, structure, interactions, parameters, methods, and performance indicators (Luburić, 2015).

3.3.5 Continuous Improvement

A long-term endeavor to enhance processes, goods, services, and people is necessary to maximize performance. Mathur (2022) defines improvement as avoiding and eliminating work mistakes to improve results and organizational aspects (capacity, people, processes, tools, etc.). Continuous improvement improves current results and future ones. Thus, TQM improves all operations, activities, and elements to satisfy customers.

3.3.6 Evidence-based Decision Making

The organization's decisions must be founded on facts, not emotions or personal interests. Data and information flow inside an organization must enhance decision-making (Permana et al., 2021; O'Hora, 2013). International standard ISO 9004:2009 describes this quality management principle: "Effective decisions are based on the analysis of data and information."

3.3.7 Relationship Management

When a company manages relationships with all of its stakeholders to maximize their impact on its performance, it is more likely to achieve long-term success (Permana et al., 2021). Every organization must maintain its relationships with suppliers and customers, and relationship management is a critical component of that management.

4. Hypothesis Development

The review of the literature reveals lots of evidence on the significant effect of TQM and transformational leadership on service quality offered by HEIs, e.g., Amir and Hendri (2022) discovered that transformative leadership improves service quality in Islamic education institutions and creates continual quality improvements through the following characteristics of transformational leaders. In the context of higher education, transformational leaders have a

strong influence on lecturers' performance which in turn raises the educational quality (Angriani et al., 2020). This claim is supported by Torlak and Kuzey's (2019) who declared that a transformational leader is expected to play an essential role in achieving the organization's goals and encouraging subordinates to perform very well and satisfying the stakeholders. Transformational leaders stimulate higher-order thinking processes; encourage the use of positive approaches in the learning process, and help students to deliver constructive feedback about the educational process and quality of teaching, as well as teacher behavior (Fauth et al., 2014; Buric et al., 2021). All these factors show the significant impact of transformational leadership on education service quality. In the same vein, Pongpearchan (2016) suggested that transformational leaders can develop the effectiveness of a university's teaching personnel. A good lecturer performance adheres to the procedures established by a university or the institution in question whereas leaders are supposed to perform a variety of activities to influence the staff and lecturers to achieve university objectives (Manurung, 2020). While every leader is known to possess certain traits and capabilities. Based on the empirical results and findings from previous studies. This study assumes that transformational leadership and service quality are linked to each other. This association suggests that transformational leadership has a direct and significant impact on education quality. According to this assumption, this study will examine the following hypothesis statement:

Hypothesis H1: There is a significant relationship between transformational leadership and the service quality of HEIs.

Moreover, Leadership plays a critical role in TQM implementation and has a significant impact on most phases of TQM. In the past, much research in numerous industries indicated a strong link between leadership style and quality management (Wagimin et al., 2019; Silva et al., 2021), whereas TQM and transformational leadership are linked to each other (Rui et al., 2020). TQM practices, as stated by multiple ISO standards, include leadership (e.g. ISO 9000:2005, ISO 9001:2008, ISO 10014:2006, ISO 9004:2009, and ISO 9001:2015). This form of leadership motivates people to solve issues in new ways, using innovative methods, and fostering excellence in all aspects of their work and thinking (Xu, 2017). The findings of Almuhammad & Jumat (2021) found that, to empower quality, transformational leaders manage, guide, and develop all followers in the intellectual, spiritual, emotional, and social dimensions. Likewise, Aldaweesh (2018) examined the association between transformational leadership and TQM in the higher education domain by selecting two different universities as case studies and comparing the results between them. The previous arguments shows that the hiring of transformational leaders will foster TQM to give positive results because those leaders have special characteristics that instills high moral principles and works to improve the skills of the people around them. Transformational leadership enhances TQM to world-class organizations

(Trofino, 2001). Because of this leadership style, employees have a clearer understanding of their potential and are more motivated to complete important activities that will improve the educational process (Birasnav & Bienstock, 2019). This study will examine the following hypothesis statement based on past claims and findings.

Hypothesis H2: There is a significant relationship between transformational leadership and total quality management in HEIs.

In addition, several studies in the past showed a significant relationship between TQM and service quality, e.g. Sakarina et al. (2021) reveal that TQM plays a significant role in affecting organizational performance and effecting higher education quality, particularly at Indonesian private universities. According to Psomas and Antony (2017), if the TQM practices if adopted by universities then the quality of education will be significantly improved in various aspects, such as leadership and top management commitment, student focus, quality planning, performance of teaching staff, process management, and employee involvement. In this regard, Yusuf (2023) suggested that TQM is a program that provides a framework and tools for quality management which is very important for the progress of higher education. It has been reported that the practice of TQM constantly and continuously fosters education quality and satisfies students. The process of ensuring that the quality of graduates is consistent with the specified/promised competencies for quality to be consistently maintained and continuously enhanced. In other words, a university is said to be of high quality if it can build and realize the campus vision through TQM and meet the needs of students and the community (Rosinawati et al., 2021). TQM can be a comprehensive and structured approach to educational management that seeks to improve educational services through refinements in response to continuous feedback (Vijayan, 2018). All these evidences-and findings lead to the following hypothesis statement.

Hypothesis H3: "There is a significant relationship between total quality management and service quality of HEIs"

In the same context, the study of Nurhayati (2018) revealed the important role of quality awareness through a mediating effect of TQM, and producing quality in accordance to consumer desires. In addition, TQM positively and significantly mediate the relationship between entrepreneurial orientation and the performance of organizations (Rida, 2020). While Al-Dhaafri (2016) confirmed the mediating effect of TQM and organizational excellence on the relationship between enterprise resource planning and organizational performance. Last, the findings of a study conducted by Ibrahim (2013) revealed that TQM is a significant mediator in the relationship between quality service delivery and coordination mechanisms in government organizations.

Arguably, recently leadership has emerged as a significant and powerful theme in along the quality management literature, as both TQM and leadership aim at improvements. A variety of leadership characteristics is highlighted in the higher education literature, including responsiveness, integrity, courage, and passion, the capacity to champion change and adopt a collaborative approach to gain the necessary support for quality management initiatives (Aldaweesh, 2018). Despite that lots of studies have examined the mediating role of TQM in various contexts and industries. Yet, there was limited academic research to examine the mediating role of TQM on the relationship between transformational leadership and service quality. Although some authors attempted to highlight a mediation model construct from these three variables, e.g. Wagimin et al. (2019) demonstrated the influence of transformation leadership on employee performance indirectly through TQM as a mediating variable in petroleum firms. As a result, their research reveals that there is a link between transformative leadership and TQM. Yet, this relationship has not been examined in higher education.

Hypothesis H4: "Total quality management mediates the relationship between transformational leadership and service quality of HEIs"

In brief, the literature contains a limited number of studies that focus on the obstacles that public and private universities in the UAE face while implementing transformational leadership and TQM (Sidaoui, 2007; Litz & Scott, 2016; O'Sullivan, 2017). However, these studies have identified several common issues that all universities may encounter. In other words, the majority of research focuses on the issues that public and private colleges face beyond service quality and do not investigate the relationship between leadership style and TQM in this setting. While there is a growing corpus of literature on transformational leadership and its effects in numerous industries and sectors, the focus on higher education institutions in the UAE may still be underexplored, particularly through the lens of TQM. To this aim, future research should overcome these constraints, adopt a more holistic perspective, and take a more inclusive and complete approach to TQM in higher education (Nasim et al., 2020). However, the link between these variables and how they are modeled in higher education remains unclear. As a result, our study addresses the lack of evidence or reporting on the aforementioned gap. Furthermore, the complexities of the education sector, as well as the unique issues that universities in the UAE face may necessitate a more personalized approach to investigating the influence of transformational leadership on service quality. Thus, more research is needed to bridge this gap and provide new insights into the relationship between transformative leadership and service quality in UAE higher education institutions.

5. Research Methodology

This study applied quantitative methods to analyze relationships between transformational leadership, TQM, and service quality of HEIs. The population is the students in six public and private universities in Abu Dhabi (UAE University, Zayed University, Higher Colleges of Technology, New York University Abu Dhabi, University of Khalifa, and Abu Dhabi University). The data instrument is a self-administrated questionnaire. The data collection has been conducted on a sample size of 431 students. A simple random sampling technique has been applied in the survey procedure. SPSS software is deployed to conduct data analysis. Regression analysis is a principal approach used to conduct data analysis and test the hypothesis of this study.

6. Result and discussions

The results of data analysis show the findings of hypotheses testing by providing evidence on the existence of effects and the strength of such effects. This analysis is conducted in several steps, starting with path analysis to assess the significance of direct relationships between transformational leadership, TQM practices, and service quality in the higher education domain. To that end, the unstandardized coefficients are used to validate and accept the hypotheses, while standardized coefficients (Beta) are used to measure the strong interrelationships between the constructs. Reading the output data in Table 3 reveals the scale of relationships between transformational leadership and TQM practices (beta = 0.83), transformational leadership and service quality (beta = 0.54), and finally between service quality and TQM practices (beta = 0.50).

Table 3: Summary of regression analysis.

Hypothesis Statement	Directions of effects	Beta	C.R	Sig.	Result
H1: Transformational leadership has a significant effect on the service quality of HEIs	Transformational leadership → Service quality	0.54	3.14	0.00	Supported
H2: Transformational leadership has a significant effect on TQM practices in HEIs	Transformational leadership → TQM practices	0.83	7.69	0.00	Supported
H3: TQM practices have a significant effect on the service quality of HEIs	TQM practices → service quality	0.50	3.11	0.00	Supported

In addition, the result reveals that TQM practices mediate the relationship between transformational leadership and service quality. All indirect and total effects must be statistically significant to consider the mediation role of TQM practices. Preacher and Hayes (2008) indicated that when the indirect impact of the independent variable on the dependent variable through a mediator, with a 95% bootstrapping confidence interval does not overlap a 0 in between, this indicates a mediation effect. Table 4 indicates the output of bootstrapping statistics for the mediating path (transformational leadership → TQM practices → service quality).

Table 4: The summary of bootstrapping of total and indirect effects

Types of effect	Sig.	Effect	Lower bound	Upper bound	0 out of interval
Standardized indirect effect	0.01	0.418	0.145	0.737	Yes
Unstandardized indirect effect	0.00	0.403	0.191	0.852	Yes
Standardized total effect	0.00	0.958	0.838	1.050	Yes
Unstandardized total effect	0.00	0.924	0.656	1.280	Yes

It is found that the indirect (mediated) effect of transformational leadership on service quality is significant (Sig. = 0.00), and 0 out of interval (0.191, 0.852). These two conditions are essential to consider the indirect path of transformational leadership service quality is partially mediated by TQM practices. The same assumption is applied to assess the total effect between the independent and dependent constructs. In brief, the result from bootstrapping reveals that both effects (indirect/total) due to the partial mediating influence of TQM practices are statistically significant (Sig. ≤ 0.05). In brief, the findings from data analysis reveal that all examined relationships are significant. This study provides a piece of novel evidence that transformational leaders could raise the service quality of HEIs to a significant level by fostering a culture of excellence and continuous improvement. These leaders prioritize the development and empowerment of their staff, encouraging them to strive for excellence in their roles. They emphasize that institutions should provide the necessary resources and support for students and teaching staff while inspiring their teams to go above and beyond in delivering high-quality services to students, faculty, and other stakeholders. In another sense, these leaders promote a customer-centric approach, emphasizing the importance of understanding and meeting the needs and expectations of the HEI's diverse community to ensure that dimensions of service quality in the education domain (e.g., reliability, assurance, tangibles, responsiveness, and empathy) are met and fulfilled.

7. Conclusions

The findings of this paper show that transformational leaders in the higher education domain enhance the lecturers and students and foster education quality by developing the education service quality. Transformational leadership establishes a positive educational culture and high level of education, and makes TQM practices easier and implemented with fewer difficulties. These claims led to the conclusion that transformational leaders in UAE universities could influence TQM and educational excellence. By promoting a culture of continuous improvement and innovation, transformational leaders can inspire faculty and students to strive for excellence in their academic pursuits. The implementation of Total Quality Management (TQM) practices becomes more seamless under the guidance of transformational leaders who prioritize collaboration and empowerment. As a result, UAE universities may see significant improvements in educational quality and overall academic performance with the support of transformational leadership. Therefore, it is recommended that UAE universities invest in developing and nurturing transformational leaders within their institutions. These leaders can motivate and empower faculty and students to reach their full potential and contribute to the advancement of knowledge and skills. By fostering a culture of quality and continuous improvement through TQM, UAE universities can solidify their reputation as centers of educational excellence and innovation in the region. Universities need to recognize the impact of transformational leadership in driving positive change and facilitating growth in academic standards and student success.

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